V. ECOLOGICAL/BIOLOGICAL BENEFITS

A. ECOLOGICAL AND BIOLOGICAL OBJECTIVES

The Napa River and its associated marshes and sloughs have been greatly altered to accommodate agricultural and urban development in the region. Upstream dams have changed the Napa River's hydrologic and hydraulic patterns affecting freshwater inflow which has led to altered sediment transport rates, channel geometry, and stream bank conditions. Levees have been constructed throughout the floodplain to provide flood protection which has undermined natural flood and floodplain processes. Marshlands have been filled, drained, and cultivated as agricultural lands which has led to the loss of aquatic foodweb processes. Ecological processes and functions essential to the health of Suisun Marsh and San Francisco Bay, are dependent on freshwater inflow and tidal influence to deliver important nutrients and maintain hydrogeomorphic processes and the brackish-saline system all critical to sustaining viable populations of priority bird and fish species.

The primary benefit of the project will be the restoration of natural processes in the North Bay that will contribute to an overall increase in ecosystem health in the North Bay. The secondary benefits will accrue as these sustainable ecological processes contribute to the restoration of habitat types that provide spawning, rearing, migration, and refugia functions for priority species.

Four Concurrent Events Make the Need and Opportunity for the Proposed Project Critical

1. The City will purchase 453 acres of wetland and upland from the Port of Oakland to be used for this restoration project, with 1998 CALFED funds.
2. A break in the levee separating the project area from the Napa River tidal area was breached in the 1997 floods, thereby opening the project area to partial tidal action which this project would be designed to capitalize on.
3. The City is prepared to donate 58 acres of wetlands and upland for restoration as part of this project therefore abandoning its ponds located in the proposed project area.
4. Continued growth in the region threatens to weaken the ecological and hydrological links between existing restoration projects in the North Bay. This project would restore the tidal connection between the Napa River to historic sloughs to the north and to state owned and managed lands to the south thereby improving these links.

The circumstances described above present a unique opportunity to implement the proposed project. If this opportunity is not seized at this time, natural forces due to levee breaches may continue to alter the tidal regime of the subject property in an unintended, unplanned manner, causing irreparable damage to the local ecosystem and potentially adverse third party impacts.

PRIORITY HABITATS

The goal of the project is to restore a total of 511 acres of acquired and in-kind lands to the following priority habitats: **tidal perennial aquatic habitat, saline emergent wetlands, tidal sloughs, and seasonal wetlands.**

PRIORITY SPECIES

The California Department of Fish and Game (CDFG) has indicated that the proposed project will provide benefits for the following priority species by reducing, if not eliminating, existing stressors. Other native species will also benefit.

	Species	Stressor: Proposed Action to Address Stressor
ERPP Primary-First Tier	Winter-run Chinook	▪ Alteration of flows: Restoration of tidal action ▪ Floodplain changes: Improved instream habitat
	Delta Smelt	▪ Alteration of flows - Restoration of freshwater flows to the Napa River
	Steelhead Trout	▪ Alteration of flows: Restoration of tidal action ▪ Floodplain changes: Improved instream habitat
ERPP Primary-Second Tier	Splittail, longfin smelt Native resident fishes	▪ Marshplain changes: Restoration of marshplain
	Striped Bass	▪ Alteration of flows: Increased flows for spawning ▪ Marshplain changes: Restoration of marshplain as rearing areas
ERPP Secondary	Migratory Birds	▪ Floodplain changes: Increased wintering habitat
Special Status Species	California Clapper rail	▪ Floodplain changes: Habitat restoration/creation
	California Black Rail	▪ Floodplain changes: Habitat restoration/creation
	Salt Marsh Harvest mouse	▪ Floodplain changes: Habitat restoration/creation

B. LINKAGES TO ECOSYSTEM RESTORATION PROGRAM PLAN OBJECTIVES AND TARGETS

The project will specifically contribute to meeting two of the CALFED Program goals identified in the ERPP and the Strategic Plan: 1) Achieve recovery of at-risk native species dependent on the Delta and Suisun Bay, and 2) Rehabilitate natural processess in the Bay-Delta system objectives.

Further, the project directly supports the **Targets** identified in CALFED's ERPP (Revised Draft February 1999) for the Napa River Ecological Unit described in the *Suisun Marsh/North San Francisco Bay Ecological Management Zone* Section (Volume 2 – Ecological Management Zone Visions).

- *Page 143: Ecological Processes – Central Valley Streamflow - Target 1:* More closely emulate the natural seasonal freshwater inflow pattern to North San Francisco Bay
- *Page 144: Ecological Processes – Natural Floodplain & Flood Processes - Target 1:* Expand the floodplain area in the Napa River, Sonoma Creek and Petaluma River Ecological Units by putting approximately 10% of levied lands into the active floodplain. Stage 1 Actions: Acquire and restore floodplains along the Napa River and the Napa/Sonoma Marsh.
- *Page 144: Ecological Processes – Bay-Delta Aquatic Foodweb – Target 1:* Increase primary and secondary nutrient productivity in Suisun Marsh/North San Francisco Bay. Programmatic Action1A: Actions described to restore streamflow, floodplains, tidal wetlands and sloughs, and riparian habitat would increase primary and secondary productivity in the Suisun and North San Francisco Bay areas.

- *Page 144: Habitats – Tidal Perennial Aquatic Habitat – Target 1:*
  Restore 1,500 acres of shallow-water habitat in this zone. Stage 1 Action: Restore tidal wetlands in Suisun Marsh.
- *Page 145: Habitats – Tidal Sloughs – Target 1:*
  Restore slough habitat for fish and associated wildlife species. Restore 5 miles of slough habitat in the near-term, and 10 miles in the long-term.
- *Page 146: Habitats – Saline Emergent Wetlands – Target 1:*
  Restore tidal action to 1,000 to 2,000 acres in the Napa River Ecological Management Unit. Programmatic Action 1A: Develop a cooperative program to acquire the land needed for tidal restoration, and complete the needed steps to restore the wetlands to tidal action.

C. BENEFITS TO OTHER ECOSYSTEM PROGRAMS AND SYSTEM-WIDE BENEFITS

There are a number of CALFED -funded restoration projects and wildlife refuge areas located in close proximity to the project area. This project would complement those efforts. For example, this marsh restoration project would directly benefit the adjacent CDFG's Napa-Sonoma Marsh project, which is located southwest of the project site, by providing additional habitat for waterfowl. The project would result in restoration of the tidal flows to the CDFG site, thereby restoring some semblance of the natural hydrology to the marsh. Further, the proposed project would increase the overall size of the preserve by 500% diminishing the effects of fragmentation and population isolation. Similarly, the project will provide a direct geomorphic link to the South Napa River Restoration Program located to the north of the site. Direct habitat links will be established to other nearby restoration sites as well.

This project is consistent with the San Francisco Bay Area Wetlands Ecosystem Goals Project. In addition, this project supports the 1995 Water Quality Control Plan, by supporting the Plan's objectives for the maintenance of the freshwater flows to the Bay, and the restoration and preservation of marshes on the perimeter of the Bay. It is also consistent with the Central Valley Project Improvement Act, the Recovery Plan for Sacramento-San Joaquin Delta Native Fishes, and the Recovery Plan for Salt Marsh Harvest Mouse and California Clapper Rail, all of which point to restoration of tidal marshes and sloughs as critical for species recovery.

D. COMPATIBILITY WITH NON-ECOSYSTEM OBJECTIVES

This project will directly support CALFED's Water Quality and Levee System Integrity objectives. Breaching of the levees and restoration of the tidal action of the historic sloughs would ultimately provide additional freshwater input into the Napa River and ultimately to the North Bay contributing to improvements in water quality for all beneficial uses. Removal of the sections of levees indicated in the project description would restore the integrity of the floodplain along North and South sloughs (see Figure 4) reducing pressure on the remaining levees and therefore contributing to levee stability. In addition, the project respond to the PSP request for focused actions on Environmental Education via the creation of an interpretive center and viewing area adjacent to the restored ponds that would help to facilitate public understanding of wetland conservation and restoration issues. The interpretive center would include exhibits that describe floodplain and tidal marsh functions, habitat creation, species use, and human benefits.

VI. TECHNICAL FEASIBILITY AND TIMING

No obstacles to project implementation (other than lack of project funding) have been identified. Regulatory agency support is strong, and the required permits, such as a Section 404 permit, appear to be obtainable. The Port of Oakland is a willing seller of the required land, and the acquisition should be finalized by July 1, 1999. Agreement on a fair market value for the property is achievable following the required federal appraisal process, which is currently nearing completion. Engineering and construction tasks necessary to complete the project are technically feasible and readily implementable using standard design practices and earthmoving equipment.

VII. MONITORING AND DATA EVALUATION

The Napa County Land Trust will hold the conservation easement for the project and a agreement between the City and the CDFG regarding the long-term ownership and management of the wetland area has been reached. CDFG will also be responsible for monitoring the project. The monitoring program will be developed as an element of an adaptive management plan. The monitoring and adaptive management plan will be provided to CALFED for approval and to check consistency with CMARP.

A. BIOLOGICAL/ECOLOGICAL OBJECTIVES

One objective of the project is to restore ecological processes and functions essential to the health of Suisun Marsh and San Francisco Bay that are dependent on freshwater inflow and tidal influence. Restoration of these processes will deliver important nutrients and maintain hydrogeomorphic processes and the brackish-saline system that are critical to sustaining viable populations of priority bird and fish species.

Hypothesis Question to be Evaluated	Monitoring Parameter(s) and Data Collection Approach	Data Evaluation Approach	Comments/Data Priority
Do tidal flows return to the restored historic slouth channels? Are hydrogeormorphic and ecological processes restored?	▪ the return of tidal flows to the restored historic slough channels ▪ resultant hydrogeomorphic and ecological process restoration	▪ Sediment budget evaluation ▪ Channel configuration changes – cross-sections ▪ Increases in primary and secondary productivity	Monitoring data will track the progress of the current restoration scheme and provide feedback to the adaptive management plan to determine if changes in the restoration scheme would improve the short- or long-term success of the program.
Do native plants recolonize flood and marsh plains?	▪ the recolonization of native plant life in the flood and marsh plains	▪ Field surveys - species diversity, survivability, dispersion, etc.	Same as above.
Do native plants recolonize along slough embankments?	▪ the survivorship of riparian vegetation plants along slough embankments	▪ Field surveys – Vegetation recolonization would be assessed through monitoring of permanent transects and aerial photography mapping	Same as above.
Do migratory and resident waterfowl and shorebirds utilize slough and marsh habitats?	▪ Occurrence of nesting, feeding, rearing waterfowl and shorebirds	▪ Field surveys –	
Do native resident and anadromous fish utilize slough habitat for spawning, rearing, and migration?	▪ the utilization of the restored sloughs by target fish species and	Field surveys: spawning surveys, dipnet surveys, use of shallow water and deep water habitats, etc Abundance and species number of benthic invertebrates would also be sampled.	Same as above.

Surveys would be designed to assess density/abundance and species composition during periods when both migratory and/or resident fish and bird species would be present, such as late fall, spring, and summer.

B. MONITORING PARAMETERS

A Quality Assurance Project Plan will be incorporated into the monitoring and adaptive management plan.

VIII. LOCAL INVOLVEMENT

All interested and potentially affected parties have been contacted and as a result they have been involved in discussions and scoping meetings. The County of Napa has been notified regarding this proposal and is aware of the proposed project. The list of collaborators and supporters includes: the City of American Canyon, the CDFG, the Napa County Land Trust, the Port of Oakland, the San Francisco Bay Joint Venture, the South Napa Waste Management Authority, the Coastal Conservancy, the U.S. Army Corps of Engineers, the Natural Resource Conservation Service, and Ducks Unlimited, Inc. Others who have been notified include The Trust for Public Land, and Napa County Environmental Management. No significant third-party impacts are anticipated as a result of the proposed project.

IX. COST AND SCHEDULE

A. COST

Cost tables are show on the following pages. In addition to CALFED funding, tentative commitments of funds from the California Coastal Conservancy ($120,000) and the U.S. Army Corps of Engineers ($20,000) have been made. Contributions of land and services have been committed to by other project participants, as shown in the table. Also, a tentative commitment by a private contributor has been made for approximately $75,000.

B. SCHEDULE MILESTONES

Completion dates for key project tasks are presented below.

SCHEDULE

Task	Completion Date
PHASE 1 (FUNDED BY CALFED IN 1998)	
Acquisition of 453 acres from the Port of Oakland	July 1, 1999
Preliminary Design of Restored Wetlands	August 1, 1999
Environmental Constraints Study	August 1, 1999
PHASE 2	
CALFED Funding	September 1999
CEQA/NEPA Documentation	June 2000
Permitting	September 2000
Final Design	December 2000
Project construction	September 2002
Environmental monitoring	2002-2007

V. COST AND SCHEDULE

A. Budget Costs

	Direct Labor Hours	Direct Salary and Benefits	Service Contracts	Material and Acquisiton Costs	Overhead and Indirect Costs	Total Cost
Phase 1 (Funded by CALFED in 1998)						
1.1. Acquisition of Property						
Subtask A - Purchase price from Port of Oakland				$1,400,000		$1,400,000 [a]
Subtask B - Difference				$400,000		$400,000 [c]
Subtask C - 58 acres of City land				$176,000		$176,000 [b]
Subtask D - City staff time	300	$15,000				$15,000 [b]
Subtask D - Port staff time	300	$15,000				$15,000 [c]
Subtask E - DFG time	100	$5,000				$5,000 [d]
1.2. Project Preliminary Design						
Subtask A - Consultant			$40,000			$40,000 [a]
Subtask B - City time	100	$5,000				$5,000 [b]
Subtask C - DFG time	100	$5,000				$5,000 [d]
1.3. Environmental Constraints Study						
Subtask A - Consultant			$15,000			$15,000 [a]
Subtask B - City time	40	$2,000				$2,000 [b]
Phase 1 Total	**940**	**$47,000**	**$55,000**	**$1,976,000**	**$0**	**$2,078,000**
Phase 2 (1999 Calfed Funding Request)						
2.1. CEQA/NEPA Documentation						
Subtask A - Consultant			$250,000			$250,000 [a]
Subtask B - City time	500	$25,000				$25,000 [b]
Subtask C - Port staff time	1,000	$50,000				$50,000 [c]
2.2. Permitting						
Subtask A - Consultant			$40,000			$40,000 [a]
Subtask B - City time	100	$5,000				$5,000 [b]
2.3. Plans and Specifications for Earthwork, Demolition, and Restoration Work						
Subtask A - Consultant			$100,000			$100,000 [a]
Subtask B - City time	200	$10,000				$10,000 [b]
Subtask C - DFG time	100	$5,000				$5,000 [d]
2.4. Breach levees, restore tidal action						
Subtask A - Contractor			$330,000			$330,000 [a]
Subtask B - City time	1,000	$50,000				$50,000 [b]
Subtask C - Coastal Conservancy Contribution				$60,000		$60,000 [e]
Subtask D - U.S. Army Corps Contribution				$10,000		$10,000 [f]

	Direct Labor Hours	Direct Salary and Benefits	Service Contracts	Material and Acquisiton Costs	Overhead and Indirect Costs	Total Cost
2.5. Remove sewage pond levees and restore area						
Subtask A - Contractor			$380,000			$380,000 [a]
Subtask B - City time	1,000	$50,000				$50,000 [b]
Subtask C - Coastal Conservancy Contribution				$60,000		$60,000 [e]
Subtask D - U.S. Army Corps Contribution				$10,000		$10,000 [f]
2.6. Restoration of Port upland area						
Subtask A - Contractor			$150,000			$150,000 [a]
Subtask B - City time	500	$25,000				$25,000 [b]
2.7. Construct viewing/education area facilities						
Subtask A - Contractor			$60,000			$60,000 [a]
Subtask B - City time	100	$5,000				$5,000 [b]
2.8. Construct new levees to protect City corpyard						
Subtask A - Contractor			$120,000			$120,000 [a]
Subtask B - City time	300	$15,000				$15,000 [b]
2.9. Environmental monitoring (3 years)						
Subtask A - Consultant			$90,000			$90,000 [a]
Subtask B - City time	100	$5,000				$5,000 [b]
Subtask C - DFG Time	100	$5,000				$5,000 [d]
Phase 2 Total	**5,000**	**$250,000**	**$1,520,000**	**$140,000**		**$1,910,000**

Source of Funding:

a CALFED
b City of American Canyon
c Port of Oakland
d Department of Fish and Game
e Coastal Conservancy
f U.S. Army Corps of Engineers

Phase 1 Funding Summary:

CALFED	$1,455,000
City of American Canyon	$198,000
Port of Oakland	$415,000
Department of Fish and Game	$10,000
Phase I Total	***$2,078,000***

Phase 2 Funding Summary:

CALFED	$1,520,000
City of American Canyon	$190,000
Port of Oakland	$50,000
Department of Fish and Game	$10,000
Coastal Conservancy	$120,000
U.S. Army Corps of Engineers	$20,000
Phase 2 Total	***$1,910,000***

X. APPLICANT QUALIFICATIONS

The full project team is identified in the organizational chart shown in Figure 3. Members of the team have implemented many similar projects in their roles in public agencies and as environmental or engineering consultants. Qualifications of key individuals are presented below.

JOHN V. WANKUM, P.E., PUBLIC WORKS DIRECTOR

PROPOSED ROLE IN AMERICAN CANYON WETLANDS RESTORATION PROJECT: PROJECT MANAGER

Highlights of Work at the City of American Canyon:

- Serves as Public Works Director overseeing Water, Sewer, Streets, and Engineering Divisions.
- Project Manager for design of City of American Canyon wastewater treatment plant.
- Reviewed and approved City Master Plans for Thoroughfare, Water Distribution, Drainage, and Sewage Collection.
- Supervised and assisted in planning street maintenance projects and development of pavement management system for the City of American Canyon.
- Negotiated transfer of water entitlement from City of Vallejo to City of American Canyon, and from City of American Canyon to City of Calistoga.

Other Pertinent Information: Registered Civil Engineer and Structural Engineer in the State of California.

WILLIAM D. ROSS, CITY ATTORNEY, CITY OF AMERICAN CANYON

PROPOSED ROLE IN AMERICAN CANYON WETLANDS RESTORATION PROJECT: CITY ATTORNEY AND PROPERTY ACQUISITION ADVISOR

Pertinent Information:

- Member of California Bar Association, 1975.
- Served on advisory committees to Senate Local Government Committees, 1986.
- Represented City of American Canyon and American Canyon Water District as City Attorney and District Attorney from 1990 to present.
- Principal in own legal firm since 1984.
- Former Deputy County Counsel, County of Los Angeles.

DAVID ZWEIG, SACRAMENTO OFFICE DIRECTOR, ENVIRONMENTAL SCIENCE ASSOCIATES

PROPOSED ROLE IN AMERICAN CANYON WETLANDS RESTORATION PROJECT: CEQA AND PERMITTING

Relevant Experience:

- Professional Civil Engineer in California and Washington.

- Licensed General Engineering (Class A) Contractor in California.
- 12 years of experience performing environmental studies and preparing CEQA documentation.
- Evaluated created wetland for Spalding Community Services District (Lassen County), Lake County Sanitation District (near Clearlake), and City of Novato.
- Managed preparation of EIR and Section 404 permit application for City of American Canyon's wastewater treatment plant project.

ELISE C. HOLLAND, SENIOR ASSOCIATE, ENVIRONMENTAL SCIENCE ASSOCIATES

PROPOSED ROLE IN AMERICAN CANYON WETLANDS RESTORATION PROJECT: CEQA AND TASK MANAGER

Relevant Experience:

- Several years of technical and practical experience with reviewing and commenting on environmental documentation particularly biological opinions, and Environmental Impact Reports/Statements/Assessments that comply with the requirements of NEPA, CEQA, FESA, and CESA.
- Director of Fisheries Program for The Bay Institute an organization working towards restoration the Bay-Delta watershed particularly its fishery resources.
- Served as technical liaison to many CALFED related workgroups tasked with developing recommendations on reducing the impacts on fisheries associated with water diversion and management in the Delta as part of CALFED's long-term solution.
- Technical and policy analyst with the US Congress Office of Technology Assessment on fisheries related issues particularly those associated with dams and diversions.

GEORGE D. HARRIS, PH.D., P.E., HYDROSCIENCE ENGINEERS

PROPOSED ROLE IN AMERICAN CANYON WETLANDS RESTORATION PROJECT: ENGINEERING DESIGN

Relevant Experience:

- Mr. Harris has over 14 years of experience in the management, permitting, and design of water and wastewater civil engineering projects.
- Currently Project Manager for the American Canyon Wastewater Treatment and Reclamation Project that includes permitting and design of a seasonal wetlands disposal project.
- Prepared hydraulic profiles and civil grading plans for numerous civil engineering projects.

XI. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The City is agreeable to and will comply with all terms and conditions specified in the Proposal Solicitation Package. Completed forms from the Proposal Solicitation Package are attached.